NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

~~SECRET~~

1 April 1963

MEMORANDUM FOR: Chief, SR/OSA/DER

SUBJECT : Status of Air Force QUILL Program

1. On 22 March 1963, the writer was given a two hour briefing on the QUILL program at SAFSP, Los Angeles, by Major David Bradburn, Project Director. Present were, Col. Joseph Ruebel, Lt. Col. Ralph Ford, Lt. Col. John Fiata, Mr. [redacted] and the writer. Prior to the briefing it was indicated by Col. Ruebel to the writer that the program is currently in a state of suspension as a result of OSA/DER Security disapproval of Major Bradburn's security plan as presented in [redacted] (in 68212) dated 7 March 1963. Major Bradburn and Mr. [redacted] have stated that they had conferred by phone with Mr. James McDonald, OSA/DER Contracting Officer and that McDonald allegedly stated that he could not give contractual approval until Security had approved of the security aspects of the program. The writer advised that he was taken by surprise by this assertion and added that it was his understanding that McDonald was not in a position to award any contracts for QUILL as he had not been given Agency approval by DER and had received no funding from NRO Comptroller.

2. The QUILL program is a bomb damage assessment design using high frequency radar as the sensor. It is both a readout and recovery system. It will use a TAT booster, Agena B second stage and guidance system, MF-4c radar and a Discoverer recovery system. Five complete systems will be procured but it is intended that only three will be flown. Operationally, the system will be launched from Vandenburg Air Force Base and recovered in Hawaii. The radar system will transmit its return in real time to the tracking stations at Vandenburg and New Boston, New Hampshire, but will also store the return on 70 mm film, which will be recovered. The film format will cover an area of 1500 miles long and 10 miles wide as it operates during each five minute pass over the indicated tracking stations. It is anticipated that there will be 16 such passes during the four day mission utilizing approximately 2000 feet of film. The details regarding the recovery procedures at Hawaii apparently have not yet been well thought out but it was indicated that it was their desire that the OSA/DER Security function on QUILL in the same manner as on CORONA. One plan presented was to fly the take to Moffitt Naval Air Station, California, in a C-130, have Mr. [redacted] perform the same functions as he does on CORONA, de-spool the take at the AP facility and have a CIA

	CHIEF
	D/CHIEF
	I
	C
	O
	STENO
	DESTROY
	CONTROL
✓	FILE
	TICKLE
	CENTER

Corona / Sub

~~SECRET~~

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

courier escort the take to SFFL, Westover Air Force Base, Mass. An alternate plan presented by Lt. Col. John Fiata was that the take would be flown from Hawaii directly to an Air Force Base in the vicinity of Westover Air Force Base, but not Westover Air Force Base, in a KC-135. [redacted] advised that approval for use of the KC-135 has been obtained from the Under Secretary of the Air Force and has been coordinated with Lt. Gen. Everett O'Donnell.

3. The QUILL program is managed by SAFSP with Major Bradburn as the program officer. Lockheed Missile and Space Company has the contract for SE/ED, systems intergration and manufacture of the radar antenna. Goodyear Aircraft Company will produce the radar pay load, the AGE and field support for the pay load system.. The [redacted] will do the data reduction and translation of the radar return upon receipt of the processed film from SFFO.

4. The pay load system is composed of four sections. The faring just fore of the Agena interface will house the radar system. Riding in front of that will be a barrel section carrying the recorder. The fifteen foot antenna will be attached to both the sections housing the radar and the Agena. The recovery systems will be located fore of the recorder section.

5. The radar recorder and antenna will be shipped from Phoenix, Arizona, to [redacted], LMSC, Sunnyvale, California. The recovery system will be shipped from General Electric, Phila. to the AP facility, Palo Alto. At this briefing, Major Bradburn indicated that the complete recovery bucket including the film cutter would be sent from the AP facility to [redacted] in Sunnyvale for HATS tests and ANECHOIC tests. He advised that during these tests AP facility personnel would have to be present in order to provide necessary technical competence. He advised that the recovery system would be returned to the AP facility for final check out and shipment to Vandenburg. He advised that at Vandenburg, it will go to the L Building for weight and balance and then mated with the rest of the pay load system in the MAB for pad compatability checks, pre-launch check-out and flight.

6. The writer pointed out to Major Bradburn and Col. Rasbal that the system as stated exposed the CORONA program.. Both officers agreed that there were points of exposure, but that they felt these could be covered by a good deception plan. The writer pointed out that it was not the intention of OSA/DDR to inhibit the program and that

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

we would do everything possible to get it moving. However, the security holes would have to be plugged in order to protect the CORONA program, which is an ultra-sensitive intelligence gathering mission currently productive. Both agreed and indicated they were amenable to any suggestions or plan that OSA/DER proposed.

7. The writer suggested that he did not feel it was good security procedure to depend on a contractor security representative to implement the security for a sensitive program at the contractor site and requested that Col. Rumbel assign an Air Force officer to the program at Lockheed to assume the security responsibilities. Col. Rumbel proposed the name of Major [redacted] who is currently assigned to the Air Force Plant Representative's Office at LMSC, Sunnyvale. The writer readily agreed to this proposal, as he is acquainted with the competence of this officer through Major [redacted] previous assignment in Space Systems Office of the Under Secretary of the Air Force in the Pentagon where he held a CORONA Cat-I clearance. The writer also suggested that, regardless of the indication in [redacted] that few if any CORONA clearances will be required, there will be a requirement for additional CORONA clearances at LMSC and Goodyear. Both agreed that they felt the number would be very small.

8. On 27 March 1963, Mr. [redacted] telephoned the writer and stated that Major Bradburn had been at the AP facility the previous day and had met with [redacted], Col. Charles Murphy, James Plumber, LMSC, and Mr. [redacted], QUILL program manager for LMSC. This had been the second time Major Bradburn had discussed QUILL procedures with Col. Murphy and Mr. [redacted] at the AP facility. The results of the 26 March meeting were reported by Mr. [redacted] in [redacted] (In 70306). During the telephone conversation, Mr. [redacted] indicated that Major Bradburn had agreed with the procedures proposed. On the afternoon of 27 March 1963 Major Bradburn phoned the writer and stated that he had met with Col. Murphy, Mr. [redacted], etc. on the previous day at the AP facility and stated that they had established a working arrangement for processing the QUILL hardware at LMSC which he felt was satisfactory to all and would not jeopardize CORONA security.

9. On 28 March 1963, Major Bradburn presented a briefing on the entire QUILL program to Mr. [redacted], Mr. [redacted], Mr. James McDonald, Mr. [redacted], Mr. Lou Mazza, Mr. [redacted], and the writer. Major Bradburn explained that the system was not

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

an intelligence gathering device in that it would be operative only over the United States. Mr. [redacted] questioned the probability of Russian trawlers positioned off the North East Atlantic Coast Line picking up the radar signals emitted from the QUILL bird. Major Bradburn explained that it was possible but that the probability was small in that the trawlers would have to be positioned exactly in the tight cone of the radar transmission and be tracking the bird during the short time it was operative.

10. Mr. [redacted] then read to the group Mr. [redacted] TWX of 27 March ([redacted] In 70306) which purportedly was the agreement reached with Major Bradburn on the 26th of March regarding QUILL procedures at ITEK. At the conclusion, Major Bradburn stated that he agreed with the summary and conclusion indicated in paragraph 5 of [redacted] but that he had reservations regarding the specific procedures. Major Bradburn stated that it was his desire, as Program Officer, to have the recovery system shipped to the AF facility, assembled and checked out by AF personnel and delivered to the QUILL crew at [redacted] Sunnyvale, as a complete unit. Major Bradburn stated that this was his desire because he felt it mandatory to have as much reliability in the system as possible and he felt this could be accomplished only by taking advantage of the experience and expertise of the AF facility personnel. This was a departure from the proposal presented in [redacted] Meehan suggested that the 70 mm cassettes would be furnished the QUILL program directly by ITEK. [redacted] proposal was that the film cutter, which is manufactured block at the AF facility, would be sent to ITEK and furnished directly to the QUILL program as an ITEK component. It was Major Bradburn's contention that to provide a recovery system, cassettes and film cutter separately would require another installation and check out at [redacted] by personnel not experienced with the hardware. Major Bradburn stated that in the meeting of 26 March Mr. Plumber guaranteed system reliability if it were done piecemeal but it was Bradburn's observation that this was an attempt by Plumber to generate another check-out laboratory and capability at Sunnyvale at the expense of the QUILL program. The writer suggested to Major Bradburn that it was his understanding that Plumber indicated such a facility was possible under the present scope of the QUILL contract. Bradburn replied that Plumber's statement was true in so far as there was no definition of scope at the present time or any commitment of dollars.

11. Major Bradburn stated that it was his understanding that processing the recovery system would require the services of several

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

experienced AP facility people on a consultant basis but that this could be provided without endangering CORONA security as they were already identified as the 162 program recovery people. Major Bradburn advised that several of the people already employed on QUILL at Sunnyvale hold CORONA clearances and that any interface with the AP facility can be conducted by them. Major Bradburn stated that he agreed with the [redacted] proposal to establish a pseudo design effort within the QUILL program at Sunnyvale to account for the black components of the recovery system. During the ensuing conversation, however, it was Major Bradburn's opinion there would only be a small number of the 100 plus people employed on QUILL at Sunnyvale who might become suspicious of the 162 program as a result of the QUILL activity. Major Bradburn felt that the majority of the people would be satisfied that the pseudo design effort was the explanation for the existence of the film cutter, cassettes, take spool, etc.

12. Major Bradburn advised that regardless of the configuration of the complete recovery system on its arrival at Sunnyvale, it would be checked out with the remainder of the pay load system at [redacted] then the complete system transported to [redacted] for the environmental testing (NATS). It would then be returned to [redacted] for approximately 30 days testing in the ANECHOIC area. Major Bradburn, though not sure, felt that the complete pay load would be disassembled and shipped to the base separately. The recovery system would go to the AP facility for shipment to the L Building at Vandenburg AFB. The other components of the pay load will be shipped directly to the Missile Assembly Building at VAFB. The recovery system would be weighed and balanced and spooled with film leader. It would then be shipped across the road to the MAB for mating with the rest of the pay load and pre-launch check out. Presumabably, though again uncertain, the CORONA people at Vandenburg would have nothing to do with the pay load after it was turned over to the people at MAB. Major Bradburn was quarried regarding the recovery procedures to be employed at Hawaii and the West Coast but advised that not much thought had been given to that area as the first launch for the QUILL program is not scheduled until September 1964.

13. On 28 March 1963, the writer telephoned Mr. [redacted] at Palo Alto and explained to Mr. [redacted] the substance of the day's meeting with Major Bradburn. Mr. [redacted] was surprised that Major Bradburn had retreated from his previous position and advised that he felt the best possible way to go was that outlined in [redacted]. Mr. [redacted] stated that he and Col. Murphy and appropriate LMSC personnel had given due concern to every aspect of the procedures and felt that their proposal

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

would best safeguard CORONA security. Mr. [redacted] felt to produce the recovery system complete with film cutter, etc. to QUILL would open the door to speculation among QUILL people at Sunnyvale. Mr. [redacted] felt that Major Bradburn was being some what unreasonable in that he was unwilling to concede to anything and expected CORONA security to bend in favor of expediency and economy. Mr. [redacted] advised that the additional check-out equipment required if the recovery system was delivered to Sunnyvale in pieces would not be extensive and that in all probability this equipment would have to be purchased any way in order to handle the additional systems at the AP facility. Mr. [redacted] felt that there would be quite a number of QUILL people who would require CORONA clearances and that once the QUILL hardware was fabricated, they would have nothing further to contribute to CORONA and would have to be debriefed. Mr. [redacted] advised that Col. Murphy had concurred in his plan and thought it was the best way to go. The writer advised Mr. [redacted] not to take any further action on this proposal at this time and that the writer would discuss it with Chief, SR/OSA and advise Mr. [redacted] of what action we wished him to take.

14. Summary - the problem reduces itself to how best to insure reliability of the complete recoverable system without compromising CORONA security. Major Bradburn now feels that this can be obtained only by utilizing the experience of the AP personnel for assembly and check-out of the complete system and delivering it to the QUILL area at Sunnyvale in one piece. This is a change from his agreement on 26 March to accept the recovery bucket without the film cutter, cassette and take-up spool. He was assured by Mr. Plummer on 26 March that reliability would be guaranteed even if the recovery system was delivered to QUILL in separate pieces. Major Bradburn, after some self deliberation and no doubt consultation with more experienced people at SSD, feels Plummer is attempting to develop a laboratory and check-out capability at Sunnyvale so that he will be prepared to accomodate any similiar programs utilizing the 162 recovery system with an all-LMSC facility. The present facility is owned by Hiller Aircraft and, though all of the engineers are LMSC, the technicians are Hiller employees. There is some vagueness about several points of the QUILL hardware flow, but apparently the real problem area is should the bucket be delivered to QUILL in pieces or completely assembled. It should be done in the manner insuring the most reliability. If mal-function in flight were traced to failure to take advantage of available assest proven reliable for security reasons, OSA/[redacted] and SAFSP would subject to severe critisism by higher authorities.

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

~~SECRET~~

15. Recommendations:

A. It is recommended that the recovery system be furnished to the QUILL program completely assembled and qualified by the CORONA experienced people at the AF facility. Col. Murphy and Mr. [redacted] are correct in stating that this procedure will expose the film carrying capability of the 162 recovery system. But it is the writer's opinion that this is the best procedure for insuring the reliability of the system. If parts are removed after check-out and shipped round-trip cross country they may well be damaged upon arrival at the QUILL area. Regardless of whether they were damaged, they would again have to be qualified, perhaps by people with less experience than those at the AF facility. It is realized that delivery of the complete system to QUILL will expose CORONA to uncleared people. But it must be remembered that these people supposedly have met HYMAN clearance standards and are QUILL briefed. It is not known how many people will be thus exposed. It is felt that many of these people will be adequately deceived by a pseudo design effort and an indication that the sensitive parts were delivered by outside vendors directly to the 162 program.

B. Many of the engineers and designers on QUILL will not be deceived by this pretense. It is recommended that Major Bradburn be authorized to decide which of his people may require a CORONA clearance because of an interface requirement or security precautionary measure and submit requests for CORONA clearances. Major Bradburn feels that the number requiring CORONA clearances will be less than twenty.

C. It is recommended that, where feasible, these people not be given a full CORONA briefing. They should not be told the history of the CORONA program and should be given no indication that satellite photography is being successfully recovered.

D. It is recommended that as few QUILL people as reasonably possible be permitted access to the AF facility, even though they are CORONA briefed. Existance of the AF facility should be made known to the few QUILL people who may be required to solve interface problems.

E. It is recommended that Major [redacted], or another acceptable Air Force officer, be given the responsibility for daily supervision of QUILL/CORONA security at LMSC. This will give Mr. [redacted] an avenue in-putting his security requirements to the QUILL program, particularly the manner in which QUILL people are to be briefed.

~~SECRET~~

NRO APPROVED FOR RELEASE
DECLASSIFIED BY: C/IART
DECLASSIFIED ON: 9 JULY 2012

F. It is recommended that no AP facility personnel be required to "crew chief" the recovery buckets at Sunnyvale or VAFB, unless it is specifically understood they disclaim any expertise regarding the film cutter, etc.

G. It is recommended that the recovery system not be returned to the AP facility after it isdelivered to the QUILL program at Sunnyvale. It should be shipped from Sunnyvale directly to VAFB after HATS and ANECHOIC testing.

H. It is recommended that the recovery system go to the "L" Building at VAFB only for the routine weight and balance testing, then returned immediately to the MAB. This will eliminate the need for CORONA cleared people at the "L" Building to be directly involved with the QUILL program.

I. It is recommended that a meeting be held at the AP facility during the week of 8 April 1963 to finalize the security plan for QUILL and that representatives of SR/OSA/DDR, Major Bradburn, Mr. [redacted], Col. Murphy, Mr. [redacted] and Mr. Plummer attend. Since final approval of the plan rests with Chief, SR/OSA/DDR, it is suggested that consideration will have to be given by any alternate proposals submitted by participants. As has been suggested by Mr. Plummer, LMSC may be able to demonstrate and guarantee quality assurance of the complete system if the sensitive parts are delivered separately. I suggest, however, that even going this route we will have to CORONA clear technicians to do the job. Regardless of the difference of opinion at the current time, it is felt that a days discussion among the indicated people will resolve the security problems and remove the obstacle allegedly barring the advance of the QUILL program.

[redacted]
Security Officer
OSA

MJTG:rfm